

# chronic disease news

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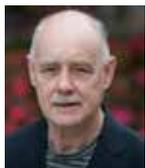
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## Editorial



Dear Readers,

Welcome to the ninth issue of *Chronic Disease News*. The Centre for Control of Chronic Diseases (CCCD) of icddr,b has published the new issue to share with you the findings

of recent research projects undertaken by CCCD and their relevance for the state of chronic disease control in Bangladesh.

This issue presents findings of three recent studies. As NCDs are the largest cause of mortality and morbidity in the developed as well as developing countries, one of the reported CCCD studies assessed the preparedness of the country's health system to fight against these diseases applying a recent framework to do so. Now, we share the conclusions of that study.

Next, this issue reports the prevalence of co-morbid condition of chronic obstructive pulmonary disease (COPD) and hypertension among adults which has been found as a significant public health problem in both rural and urban adults in Bangladesh affecting present and future health of the increasing frail group with multiple conditions.

It also addresses a new and important topic in the area of non-communicable disease (NCD) risk factors in Bangladesh—overweight and obesity in urban areas. CCCD conducted the first national study on childhood obesity in urban Bangladesh. The study was conducted in seven divisional cities. The study also measured the body mass index of the mothers of these children. It confirms the 'double burden' in the Bangladesh population: obesity and malnutrition.

As a part of its institutional capacity building, CCCD facilitated senior staff participation in the 2013 NIH residency training component within the biomedical/biobehavioural research administration development programme. The Centre completed the 4th round of its MPH-Plus programme providing a new cohort of six interns giving extensive theoretical and hands-on training for a period of six months. In this way, this CCCD programme is enlarging its critical in-house mass of advanced MPH graduates with advanced knowledge and research expertise in chronic diseases. Many of the 24 graduates have entered CCCD's present projects.

This is my last column. I am delighted to announce that in September Dr. Dewan Shamsul Alam is taking over the directorship.

I hope you find this issue of newsletter informative and interesting.

Professor Louis Wilhelmus Niessen  
Principal Investigator and Director, CCCD

# Health system preparedness in Bangladesh to respond to the growing burden of NCDs

According to the World Health Organization report, nearly 600,000 people die annually due to non-communicable diseases (NCDs) like cardiovascular disease, chronic obstructive pulmonary disease, cancer, etc. in Bangladesh, and over 60% of them die before 70 years of age. On the disease burden World Bank reports that, NCDs, including injuries, account for 61% of the disease burden in terms of disability adjusted life years loss. The impact of NCD-related mortality and morbidity is expected to be greater over the next several decades due to ageing population.

Recent Bangladesh NCD Risk Factor Survey in 2010 indicated that almost all adults had at least one risk factor for NCDs. Together, this information suggests a rapidly changing health situation in Bangladesh.

Considering the current burden and upcoming epidemic potential of NCDs, a group of researchers from the Centre for Control of Chronic Diseases (CCCD) conducted a study to assess the health system preparedness and the country capacity to address this NCD burden in Bangladesh. The study was conducted through a framework-based review of the literature which identified gaps in policy and health system along four key dimensions: building awareness and commitment, re-orienting public policies, developing new service delivery models, and ensuring equity. The researchers reviewed research reports, and policy documents, supplemented with key informant interviews, to measure current status against each of the dimensions.

The study findings show that the importance of NCDs is slowly gaining recognition by both the government and NGOs. NCDs have been given priority in the Health Population & Nutrition Sector Strategic Plan (HPNSSP) 2011-2016 and revised and updated Strategic Plan for Surveillance and Prevention of NCDs.

Awareness of NCDs in the public sector is rising following awareness-raising initiatives. But advocacy activities by different organisations were found to be limited to seminars and workshops, without a specific strategy and minimal focus has been given on risk factors prevention. Bangladesh is yet to develop a clear national NCD plan and currently there is no routine surveillance of NCD-related morbidity and mortality or NCD risk factors. In the area of health promotion limited human and technical capacity was revealed. Despite being included in the HPNSSP, not much health promotion activity is happening on the ground.

The study also found that the Strategic Plan for Surveillance and Prevention of Non-Communicable Diseases fails to identify strategies to engage multiple stakeholders. Although the government has initiated NCD corners, an NCD service delivery model as a pilot programme, in practice, the role and functions are poorly defined and still unclear.

NCD prevention and treatment are not included in the primary care essential services package. Currently, NCD treat-

ment is provided mostly from the tertiary level and typically available in big cities. This creates disparity and inequitable distribution of health services due to lack of access to those facilities.

Several studies examined equity issues in general but not the equity in access and cost for prevention and treatment of NCDs. No ongoing monitoring of equity issues, and no research related to high-risk groups for NCDs were available. No measure of equity access and payment was found.

The study raised several issues to guide policy makers and development partners in low-income countries like Bangladesh:

- Current activities do not commensurate with the scope and the complexity of the problem; most activities appear weakly connected and somewhat spasmodic.
- Activities and actors are too narrowly focused in Bangladesh; the good examples for control of NCDs are based on long-term, multi-sectoral action across a

range of government departments and involving civil society and the private sector among others.

- Key development partners, particularly the traditional donors, are remarkably absent from the process indicating bias towards communicable disease observed in donor behaviour elsewhere.
- Given the commendable progress towards Millenium Development Goals 4 and 5 in Bangladesh, it seems that it is possible to produce remarkable change at the national level through effective alliances and careful planning and monitoring. Lessons learned from the achievements in maternal and child health need to be carefully examined to determine what can be effectively applied to the control of NCDs.
- Issues of equity in relation to NCD control seem remarkably absent in documents and reports of discussions. More research needs to be done to address equity in service provision, payments, health outcomes and access to

and utilization of preventive and curative services.

- The costs of providing NCD care need to be estimated, and the expected distribution of costs across government, patients and development partners should be planned taking into consideration funding capacity; projections should be made for how this distribution should change over time.
- The framework could be applied regularly, perhaps every two or three years, to assess progress and find out the areas where more efforts are required.

Finally, the study demonstrated early progress in awareness and commitment, establishment of public private alliances, and commencement of some public policy activities. Key challenges for policy makers include the need for better integration of activities across different NCDs; more resources for implementation; and attention to the needs of NCDs in development of service delivery and health financing reforms in Bangladesh.

## Co-morbidity of COPD and hypertension in Bangladeshi adults



Being a leading cause of mortality and morbidity among people over 40 years of age, chronic obstructive pulmonary disease (COPD) is one of the non-communicable diseases (NCDs) rising alarmingly in Bangladesh.

COPD is a progressively disabling disease of the lower respiratory tract and it is often diagnosed in the middle-age or in elderly people.

In 2005, COPD accounted for 3 million deaths and 90% of those deaths occurred in low- and middle-income countries. Mortality due to COPD is projected to increase by 30% in the next decade.

Not only mortality, another concern issue due to COPD is its co-morbidity. A recent study reports that 51% COPD patients have at least one chronic co-morbidity condition in addition to COPD. And, one of these is hypertension.

Hypertension is one of the biggest risk factors for cardiovascular diseases and plays major etiologic role in cerebrovascular diseases, ischemic heart disease and stroke. Hypertension has been reported to be the most frequent co-morbidity in COPD patients. The severity of COPD is reported to be associated with increased risk of hypertension.

On the other hand, hypertensive patients have lower than predicted lung function, forced expiratory volume in first second and forced vital capacity, compared to non-hypertensives. When hypertension exists as a co-morbid condition with COPD, the treatment, prognosis and quality of life of the patient become further challenged as compared to patients with isolated COPD or hypertension. For example, some antihypertensive drugs such as  $\beta$ -Blockers may worsen COPD and again corticosteroid often used for COPD treatment may elevate blood pressure.

To find out the prevalence of COPD in Bangladesh, the Centre for Control of Chronic Diseases (CCCD) of icddr,b has conducted a community-based study in both rural and urban settings in the country, that also looked at COPD patient's co-morbidity with hypertension. The study was conducted in Matlab, a rural area in Chandpur district and in Kamalapur, the semi-urban slum area in Dhaka city.

Men and women aged 40 years and above participated in this study (men=1,715 and women =2,043). The researchers measured lung function and blood pressure of the individuals. For measuring lung function, researchers used spirometry and defined COPD

using Global Initiative for Chronic Obstructive Lung Disease (GOLD) criteria. Hypertension was defined as systolic BP  $\geq 140$  or diastolic BP  $\geq 90$  mmHg.

Preliminary results showed that COPD and hypertension were prevalent among 13.4% and 38.4% of the participants respectively (Figure-1). While COPD was more prevalent among males, the prevalence of hypertension was higher among females. About 4.4% of the total participants or a third of COPD patients had both COPD and hypertension as co-morbid condition (Figure 2). Co-morbidity was higher among older age group (age $\geq 60$  years), male participants and smokers. The prevalence of co-morbidity was similar across rural and urban sites.

The study concludes that both COPD and hypertension are

prevalent as a significant public health problem in rural and urban Bangladesh. Existence of hypertension among a third of COPD patients has implications for disease treatment, prognosis and quality of life.

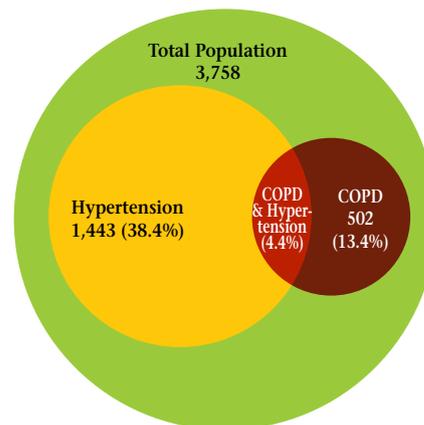


Figure-1: Distribution of COPD and hypertension and co-morbidity among study participants

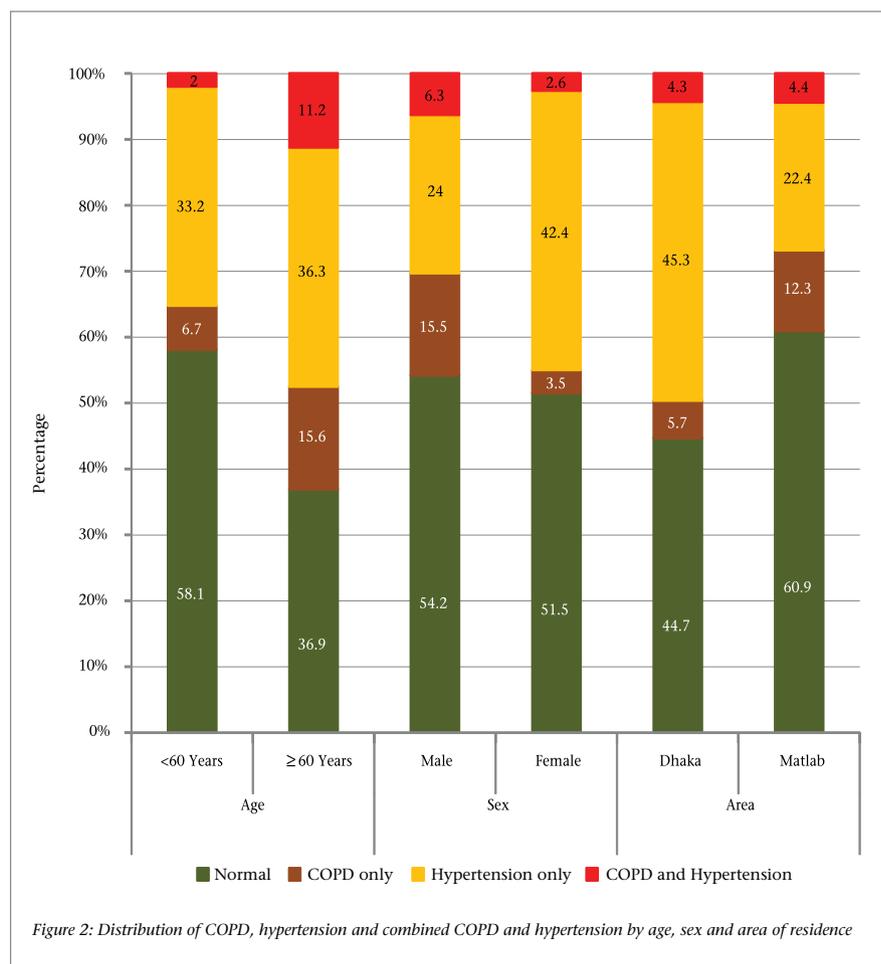


Figure 2: Distribution of COPD, hypertension and combined COPD and hypertension by age, sex and area of residence

# Prevalence of childhood obesity in urban Bangladesh

Non communicable diseases are associated with mortality worldwide. Childhood obesity is associated with increased risk of various non communicable diseases and death in adulthood. In 2010, more than 42 million children <5 years were overweight globally and 35 million of them lived in the developing countries. Studies show that prevalence of obesity is increasing faster in children 5-19 year of age in low- and middle-income countries than the high income countries.

Although there is very little information on childhood obesity in Bangladesh, a report published by Bangladesh Bureau of Statistics has demonstrated that the prevalence of overweight and obesity in non pregnant mothers was 17%; 32% in urban areas and 12.7% in rural areas with a marked variation across divisions. However, among children <5 years only 1% were found to be overweight and obese, including 1.6% in urban areas and 1.3% in rural areas.

There is no published report on the prevalence of obesity in school-age children in Bangladesh. The Centre for Control of Chronic Diseases (CCCD) of icddr,b has conducted a study to investigate obesity among the school-age children (5-18 years of age) and their mothers in seven divisional cities in Bangladesh between May and June 2013 with funding from the National Nutrition Services through the Institute of Public Health Nutrition.

The centre study used the guideline of International Obesity Task Force (IOTF) for defining age and sex specific normal weight, underweight, overweight and obesity in children, and the guideline of World Health Organization (WHO) was followed for estimating underweight, overweight, normal weight and obesity in mothers.

The study has demonstrated that 56% children had a body mass index (BMI) indicating age-sex specific normal weight, 30% children had a BMI indicating lower than the normal weight (underweight), and 14% children had a BMI indicating higher than the normal weight (overweight) including 4% of them being obese. The prevalence of overweight and obesity in children varied across seven divisions (Figure 1), and has demonstrated a higher prevalence among pre-adolescent children without sex disparity.

The prevalence of maternal overweight and obesity was 52% and 16% of the mothers were obese. Maternal obesity was found substantially higher across all seven divisions and children who had overweight or obese mothers were heavier than the children who had mothers with normal weight or underweight (Figure 2).

Further analyses have demonstrated that obesity has been higher

among those children who lived in a richer family, who lived in Dhaka, who had a more educated mother, and who had a overweight or obese mother (BMI >25).

The study concludes that the estimates of overweight and obesity has been nine folds higher in the study children and 20% higher in the mothers of the study children compared to the 2005 estimates of overweight and obesity in pre-school children and their mothers in urban areas.

The overall phenomenon supports existence of double burden of both under-nutrition and over-nutrition in school age children, and a rise in obesity and overweight in both mothers and children in urban areas. Further research for a comprehensive understanding of the risk factors of childhood and maternal obesity would be imperative for giving a direction for the control of childhood obesity in the Bangladesh.

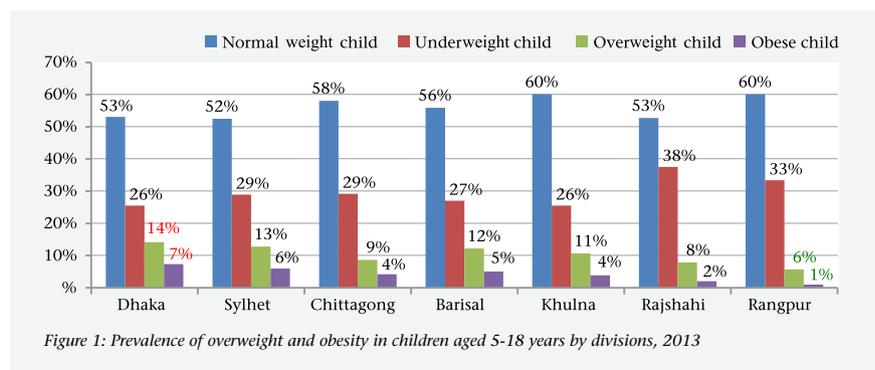


Figure 1: Prevalence of overweight and obesity in children aged 5-18 years by divisions, 2013

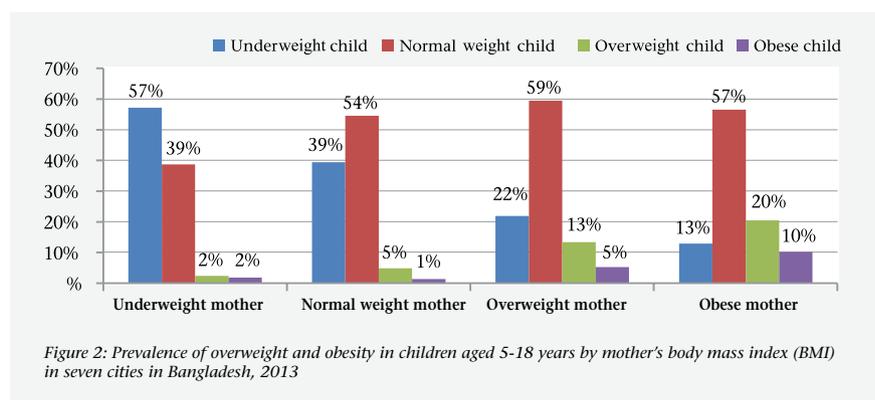


Figure 2: Prevalence of overweight and obesity in children aged 5-18 years by mother's body mass index (BMI) in seven cities in Bangladesh, 2013

## CCCD's capacity building at all levels

One of goals of the Centre for Control of Chronic Diseases (CCCD) is capacity building at all levels. Mr Abdul Wazed, Coordinator, Centre Support Unit (CSU) of CCCD has



participated in the 2013 NIH Residency Training component of the Biomedical/Biobehavioral Research Administration Development (BRAD) Programme.

The purpose of the training was to enhance the participating institution's ability to conduct and support research. The objectives of the three-week training programme, held in the United States in May, were to 1) help participants navigate and understand the NIH structure and pro-gramme operations, 2) introduce participants to NIH grants policy and compliance requirements, and 3) provide an overview of the NIH knowledge base and tools for building a strong research administration support and

management infrastructure at the participant's institution.

Although Bangladesh was not included in the BRAD training award from 2009-2014, the National Heart, Lung and Blood Institute (NHLBI) nominated Mr Wazed from its Bangladesh Centre of Excellence (CoE) for the residency component of BRAD in Bethesda, USA.

Participating in the training Mr Wazed said, "I am very happy to participate in this training programme. It was a great learning experience.

This programme has given me insights in NIH's administrative management. Dr Cristina Rabadan-Diehl, Acting Director, Office of Global Health, NHLBI, provided an eye-opening briefing at her office in Bethesda, depicting the objective of arranging participation from the CCCD of Bangladesh and from Guatemala. Since both the CoEs were awarded funds through the NIH contract, a special introductory meeting was arranged with Christine Cooper and

Debi Spillane, who monitor the financial side of this contract. The meeting provided a lot of helpful insights."

As our CSU is responsible for research administration and research support activities related to a substantial number of NHLBI research studies, Mr Wazed is at the interface between icddr's Research Administration and Finance, NIH/NHLBI offices, Westat, and the principle investigators and other researchers. The training provided in general additional ways to improve project management, implementation, and maintenance of post-award processes that facilitate financial accountability and grant closing.

Mr Wazed stated that the training was very beneficial: the course enhanced his technical capacities and skills to better carry out the CSU oversight and administrative management of the NIH funds. It helped him in the implementation of a wide range of overall support mechanism related to other ongoing and future research activities of CCCD.

### GeoHealth Network meeting and workshop



The GeoHealth Network meeting and workshop was held recently at icddr,b to discuss on the current activities and future plan of the hub and to define some action points in the research areas on air pollution, water pollution and climate change.

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